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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/815,077

03/31/2004

Thomas P. Nefos

7344

7590 01/05/2007
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EXAMINER

LAURITZEN, AMANDA L

ART UNIT

PAPER NUMBER

3737

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/815,077

Applicant(s)

NEFOS, THOMAS P.

Examiner

Amanda L. Lauritzen

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3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/31/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4-1-2004</u>.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application</p> <p>6) <input type="checkbox"/> Other: _____.</p> |
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DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because the limitation "the dual-core processor" at lines 9-10 on page 70 lacks antecedent basis.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quistgaard et al. (U.S. 6,569,101) in view of Holupka et al. (U.S. 6,256,529).

Quistgaard et al. disclose a battery-powered handheld ultrasonic imaging system with LCD display comprising: a dual-core processor (para. 9), means for storing multiple images (video memory 254 provides storage of image frames as in para. 44), means for beam forming and processing, including storage of rf data and means for separating samples into in-phase and quadrature components with baseband demodulation (paras. 49-51). The beam formation is further disclosed to comprise fpga (para. 9). Quistgaard further discloses audio speakers and an operator interface including keypad and trackball and data storage with a standard pc memory card and USB port for flash memory capability (paras. 38 and 45).

Quistgaard et al. disclose all features as substantially claimed but does not include a head mounted display; however, in the same field of endeavor Holupka et al. disclose an ultrasound system with a head-mounted display that includes processing means for converting LCD signals

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into NTSC video signals (col. 9, lines 10-27). The headset of Holupka is capable of being used in adverse lighting conditions and includes ear speakers (see Fig. 11 and stereo sound at col. 9, line 21). It would have been obvious to one of ordinary skill in the art at the time of invention to use the head-mounted display of Holupka et al. with the handheld ultrasound system of Quistgaard et al. in order to provide an alternative virtual reality visualization of a treatment area (for motivation see Holupka col. 1, lines 10-11; col. 3, lines 22-25).

Regarding cable or wireless connection capability, the invention of Quistgaard as modified by Holupka includes all features as substantially claimed, as detailed above but is silent with regard to mention of the computer connection, however, both wireless and cable computer connections are well known in the art.

Regarding the limitation that the memory is non-volatile, the memory formats disclosed by Quistgaard, namely PCMCIA and USB flash memory capability, are well known for non-volatility.

Regarding claim 7, the invention of Quistgaard as modified by Holupka includes all features as substantially claimed including audio capability of the headset, but does not explicitly disclose "ear speakers" as applicant has defined them as those that are actually placed within the ears. However, use of speakers of many varieties, including headphone-style sets that are placed within the ear are well known in the surgical/ultrasound arts and it therefore would be obvious to modify placement of the speakers within the ear in order to reduce ambient noise.

Regarding claim 12, for a low power, low voltage DDR SDRAM, the invention of Quistgaard as modified by Holupka includes all features as substantially claimed, including

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RAM memory storage capability but is silent regarding double data rate SDRAM, however; this form of RAM is well known in the medical ultrasound arts.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda L. Lauritzen whose telephone number is (571) 272-4303. The examiner can normally be reached on Monday - Friday, 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



A.L.L.
12/18/2006



ELENI MANTIS MERCADER
SUPERVISORY PATENT EXAMINER